BAREILLY INTERNATIONAL UNIVERSITY, BAREILLY

Effectiveness of postnatal health education package among mothers

By

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Protocol of Thesis to be submitted to the Bareilly International University, Bareilly for the partial fulfilment of the requirements for the Degree of

DOCTOR OF PHILOSOPHY

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FACULTY OF NURSING

Faculty of Nursing

(Affiliated to Bareilly International University, Bareilly)

DECLARATION BY THE CANDIDATE

I hereby declare that this thesis protocol entitled "***effectiveness of postnatal health education package among mothers*** " will be a bonafide and genuine research work carried out by me under the supervision of **Dr. Prema P** for partial fulfilment of the regulations for the Award of the degree of **Doctor of Philosophy in Nursing**.

Date: 28/04/2019

Signature of the Candidate

(Priyanka A Masih)

Certificate by the Supervisor

Faculty of Nursing

(Affiliated to Bareilly International University, Bareilly)

This is to certify that the facilities for the research work entitled ***"effectiveness of postnatal health education package among mothers"*** allotted to **Mrs. Priyanka A Masih** under my direct supervision and guidance do exist in Faculty of Nursing, Bareilly.

I will ensure the authenticity of the thesis protocol topic and research methodology which conforms to the standards of Bareilly International University.

Supervisor

Signature 28/4/19

Name with Degree: Dr. Prema.P

Faculty of Nursing

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INTRODUCTION

Behold children are the heritage from the lord. The fruit of the womb a reward.

sharefaith

The world health organization (WHO) stated postnatal period begins immediately after birth of the baby and extends upto six weeks (42 days) after birth.[1] Health professionals in health facilities need to give primary health care to the mother and newborn.[2] Immediately after birth, bleeding and infection pose the greatest risk to the mother's life, while preterm birth, asphyxia and severe infections pose greatest risk to newborn. Two thirds of all neonatal deaths arise from such complications, while inappropriate feeding and cultural practices during the postnatal period may pose further risks to the life of the newborn .All these maternal and neonatal problems could be reduced if women receive appropriate postnatal care.[3]Postnatal period is a period of adjustment after pregnancy when anatomic and physiological changes of pregnancy are reversed and body returns to the normal state. The post natal care is mainly includes the Post natal Diet, Post natal exercises, Perineal hygiene, Breast feeding, Family planning and danger sign during the postpartum period among mother and newborn along with cord care and Immunization and postnatal visits .[4]

Post natal diet to replenish all the nutrients that have lost during pregnancy. **In case of Caesarean section** need to be extra careful as difficult to digest heavy food**,** the overall nutrition of the newborn over the first few months depends solely on what nutrients are being passed through breast milk. So eating nutritious and wholesome food should be the top priority of a nursing mother. Nutritional education should be made available to the postnatal mothers to improve their knowledge.[5]

Postnatal exercises are important to regain the strength of abdominal and pelvic floor muscles, after the birth of baby as strong muscles help prevent lower back injury, prevent abdominal organs from " dropping forward" through lack of support and help to regain a flat stomach. Postnatal exercises, a combination of Kegel and **abdominal exercises** will help abdomen return to its original size.[6]

Childbirth is a very traumatic event for a woman's body, often resulting in reduced strength in pelvic floor muscles, a torn or cut perineum, hemorrhoids and lochia, or the bloody discharge. **Proper perineal care** can make these problems more manageable and help to encourage healing.[7]**Breast milk** is rich in nutrients and antibodies and contains right quantity of fat, sugar, water and protein. Babies who are exclusively breastfed recover quicker from colds, infections and

strengthen the immune system. It reduces the chances of ovarian, breast cancer and Family planning and spacing advantages in the mother. [8]

Postpartum family planning (PPFP) focuses on the prevention of unintended and closely spaced pregnancies through the first 12 months following childbirth. [9]Many pregnant women are unable to recognize the **danger signs** of obstetric complications. When complications occur, the unprepared woman, her spouse and/or family waste time in recognizing the problem. Women and newborns need timely access to skilled care during pregnancy, childbirth, and the postpartum/newborn period.[10]

Immunization has been proven to protect children from a wide variety of fatal illnesses these include polio, measles, mumps, and rubella. In fact, vaccines have been shown to create childhood immunity 90% to 100% of the time.[11] Proper **umbilical Cord care** can prevent complications Omphalitis Umbilical granuloma and Persistent bleeding.[12] The first 48 hours of the post-partum period, followed by the first one week, are the most crucial period for the health and survival both of the mother and her newborn. Most of the fatal and near-fatal maternal and neonatal complications occur during this period. So **postnatal health checks up** are essential.[13]

As per the National family health survey only 42% of women were receiving postnatal services.[14] India's maternal mortality rate reduced from 212 deaths per 100,000 live births in 2007 to 167 deaths in 2013. Globally, about 800 women die every day of preventable causes related to pregnancy and childbirth; 20 per cent of these women are from India. Annually, it is estimated that 44,000 women die due to preventable pregnancy-related causes in India. The Maternal Mortality Ratio – the number of maternal deaths per 100,000 live births – reduced from 212 in 2007 to 167 in 2013.[15]

Sandeep Kumar Uppadhaya[16]conducted study related to utilization of postnatal care services. Only 35.8% of mothers received 2or more PNC visits. It concluded low utilization of postnatal health services among the study population. **Amolo L, Irimu G, Njai D[17]**conducted study on Knowledge of postnatal mothers on essential newborn care practices and concluded Knowledge gaps existed regarding cord care, eye care, and immunization.**Mishra P[18]**conducted study on postpartum contraceptive use in rural Bareilly. Only 13.8% mothers' adopted postpartum contraception due to Lack of knowledge (32.5%) which indicated the need for improving awareness among the study population.

Sarkar J, Konwar G, Das LK [19]conducted study on Assessment of knowledge and practice regarding postnatal exercises. Finding suggested inadequate knowledge and practice of postnatal exercises among postpartum mothers. The World Health Organization (WHO) describes the postnatal care as the most critical and most neglected phase of the life of the mothers and babies as most of the death occur during the postnatal period.[20]

Hence researcher has selected postnatal health education package on postnatal care to improve the knowledge of mother regarding newborn care, self care, nutrition and hygienic needs, postnatal visit, family planning services, postnatal exercise and danger sign during the postpartum period among mother and newborn. Practice regarding utilization of postnatal health services and the perception regarding importance of postnatal care will be enhanced.

REVIEW OF LITERATURE

a) Review related to postnatal care
b) Review related to newborn care
c) Review related to post natal health services

a) Review related to postnatal care

Angel Rajkumari (2015)[21]conducted a pre experimental study to assess the effectiveness of structured education regarding knowledge on postnatal diet among postnatal mothers. The study was conducted in SAI hospital Teluganna. Thirty postnatal mothers who were under the age group o 23-25 years were selected by using sample random sampling technique. The level of knowledge were assessed using structured questionnaire modified three point likert scale by using a checklist through one to one teaching by lecture, demonstration, video clipping and verbalization. The parameters of postnatal diet that includes meaning of postnatal diet, foods to be taken, foods to be avoided, energy giving food, minerals and fibre rich diet and myths regarding postnatal diet. During the pre-test, majority 20 of them had inadequate knowledge about postnatal diet. Eight of them had moderate knowledge and 2 of them had inadequate knowledge, while considering the overall knowledge of the samples during post test, majority of them 26 had adequate knowledge, 2 of them had moderate knowledge and 2 of them had inadequate knowledge. The study finding revealed that planned teaching programmes were highly effective in improving knowledge of past natal mother.

Savitri Raman (2015)[22]conducted a quasi experimental study to assess the effectiveness of self perineal care and aseptic perineal care towards healing of episiotomy wounds among postnatal

mother. The study was conducted in the postnatal wards. St John Medical College hospital and Research centre, Bangalore 100 postnatal mothers were selected by using purposive i sampling, 50 in experimental and 50 in control group. REEDA scale (Redness, Edema, Discharge from episiotomy site, approximation) was used to measure episiotomy wound healing and an observational checklist to determine the ability to perform self perineal care. Postnatal mother in control group received the routine aseptic episiotomy wound care whereas the postnatal mothers of experimental group were instructed on self perineal care based on the checklist consisting of 10 items of instructions that includes hand washing remove pad front to back, wipe from symphysis pubis towards to anus, wash perineum with soap and water and patted dry after bathing ,voiding and bowel movements , fix the clean pad with care, avoid touching central area and wash hand .overall the rate of the episiotomy wound healing was better in self perineal care group compared with aseptic perineal care .Nurses and midwives should encourage the woman regarding stringent perineal care to reduce the risk of contamination and enhance wound healing.

Umar N Jibeil (2017)[23]conducted a quasi –experimental study to assess the impact of health education intervention on knowledge and utilization of postnatal care services among women in Edu local government of Kwara state, Nigeria. a multistage sampling method was used to select 60 samples in experimental and in control group and twenty five item questionnaire on knowledge and utilization of postnatal health services were made in 2 section . The first section includes knowledge of women about postnatal care services and the next section was designed in likert scale. In the intervention section, the experimental group had health education intervention on postnatal care services and control group were given health education intervention on transmission and control of sexually transmitted infections. The finding showed an improvement from pre intervention mean score s of 64.26 to post intervention scores of 98.15 for the experimental group again 68.88 post intervention mean score of control group while the pre intervention mean score of utilization was 56.67 compaired with post intervention mean score 92.9% for the experimental group and 61.04 for the control group utilization. Study concludes that health education intervention had positive impact on knowledge and willingness of women to utilize postnatal care and the knowledge gained need to be sustained to improve women health seeking behaviour.

b) Review related to newborn care

Regina Claudia Melo Dodt (2015)[24]conducted an experimental study to assess the educational intervention to promote maternal self efficiency in breast feeding. The purpose of the study was to build, validate and assess the education intervention using the flip chart titled “I can breast feed my

child''. This study was conducted on large public maternity hospital, Brazil that provided tertiary neonatal and prenatal care. Total 201 samples are selected through random sampling method and pre-test was conducted through a baseline survey on Breastfeeding Self efficacy scale (BSES). The intervention was a flip chart that includes technical domain by teaching the adequate positioning of the newborn during feeding, ways to improve comfort during the act of feeding, recognition of signals of quality lactation and proper suction And the interpersonal domains were desire to breast feed, the internal motivational for breast feeding was based on satisfaction with the breast feeding experiences. These instruments were used to measure, BSES-SF to assess the maternal self efficiency in breast feeding. Second a questionnaire to address socio demographic profiles and clinical variables etc and the third is a telephone contact in both experimental and control group. The findings were the mother who has undergone the intervention has higher self efficacy score than the mothers in control group. This study emphasized educational intervention provided positive results. Therefore, it is important that nurse use health education strategies such as flip chart to promote breast feeding.

Tinku Anna Cherian (2016) [25]conducted a pre-experimental study to assess the effect of video assisted teaching on knowledge regarding essential newborn care among primigravidae in Bombay hospital college of Nursing Indore, 60 primigravida mothers are selected using purposive sampling technique. Structured knowledge questionnaire was used to collect data. Video assisted teaching was provided regarding essential newborn care such as personal hygiene, temperature maintaince, breast feeding, umbilical cord and immunization. The post interventional score was higher than the pre experimental knowledge score. This study finding showed that video assisted teaching was effective to improve the knowledge of primigravida mothers.

Ms Kanetian Bala (2013) [26]conducted quasi-experimental study to assess the effectiveness of an instruction teaching programme on the knowledge of postnatal mothers regarding newborn care. Sixty two postnatal mothers were selected by consecutive sampling technique. The pre-test was taken by using structures knowledge questionnaire regarding newborn care related to four aspects like breast feeding, prevention of infection, immunization and prevention of low body temperature. In the pre-test majority of the postnatal mothers (77.42%) had good level of knowledge, 14.52% mothers having average level of knowledge and only 8.06% mothers had good level of knowledge and 100% mother got very good level of knowledge at post test level. the maximum gain bring in the area of breast feeding and lowest in the area of prevention of low body temperature . this study found that a teaching programme was effective as a method to improve the knowledge of postnatal mothers by saying that cognitive change can be brought about by teaching programme.

Padma B (2013) [27]conducted a quasi experimental study to assess the effectiveness of planned teaching programme in improving the awareness of postnatal mothers. The purpose of the study to assess and improve the knowledge of postnatal mothers on danger signs of newborn illness. This study was conducted at CAIMS hospital Kaimnagae and 30 postnatal mothers were selected through convenient sampling technique. A structured questionnaire is used to assess the knowledge before and after the teaching. The pre-test knowledge score represents that 43.4% mothers had average knowledge, 56.6% below average and none has obtained above average knowledge score. Educational training includes the signs of newborn illness like change in behaviour, thermal instability convulsion , poor appetite, vomiting, diarrhoea, no urination in the first 24 hours, no bowel movements in 48 hours, central cyanosis, drowsy, lethargy, white patches on the tongue, shortness of breath, yellowish discoloration, dehydration, eye infection, umbilical cord infection. After the education the post test knowledge of postnatal mother was improved that is 70% of mother obtained above average knowledge score. This study emphasized that health promotion activities and will increase the awareness of mothers in danger signs of newborn illness. Identification of clinical signs and timely intervention would be the key factor to reduce neonatal morbidity and mortality rate.

c) Review related to post natal health services

Sudharanam Balarubramaniam (2017) [28] conducted a quasi-experimental study of systematic screening for family planning services among postpartum women attending village health and nutrition days. This study was used to assess the effectiveness of systematic screening to increase postpartum family planning use during community health days in India without adversely affecting immunization services. Postpartum family planning counselling and service delivery were provided to all Nurse Midwives and community health workers. Data were collected from postpartum women. There was no difference in family planning services use was found in the interventional group, but significantly fewer interviewed women report receiving family planning services at ending in the comparison group. The use of the systematic screening tool appears to increase acceptance of family planning services when integrated with community based services,

3. AIM

To assess the effectiveness of postnatal health education package regarding postnatal and newborn care among postnatal mothers in terms of knowledge, perception and practice.

OBJECTIVES

1. To assess the effectiveness of postnatal health education package regarding postnatal and newborn care on knowledge, perception and practice among postnatal mothers.
2. To correlate among the level of knowledge ,perception and practice regarding postnatal and newborn care in postnatal mothers of experimental and control group
3. To associate the post-test knowledge, perception and practice regarding postnatal and newborn care among postnatal mothers in the experimental and control group with their selected demographic variables.

4. MATERIAL AND METHOD

Research Design. Quasi-experimental, non-equivalent control group post-test only design will be used to assess the effectiveness of postnatal health education package and the study will be conducted in Rohilkhand Medical College and Hospital Bareilly in experimental and control group.

Study duration

The study will be carried out for 12 months. This period will be used for reliability and validity of the tools, collection of data, interpretation and analysis of data.

Sample size and Sampling Technique

The sample size for the current study will be calculated using the formula n=Z2pq/d2 where z=1.96 at 95% confidence, p=postnatal check-ups utilization, q-1-p, d=absolute allowable error for this study maximum variability that is PNC utilization is 50%, therefore p=0.5, q=0.5,d=20%of p. taking design effect of two, the required sample size will be 192.16. 230 sample calculated with 20% attrition rate which will be divided into experimental and control group (100 sample in each group).

Study population

The study population include post natal mothers admitted in the Rohilkhand medical college and hospital.

SAMPLING CRITERIA

Inclusive criteria:

- Modes of delivery like normal vaginal delivery, caesarean and instrumental delivery will be included in the study
- Mothers who will be willing to participate in the study
- Mothers who will be available at the time of study
- Normal newborn baby

Exclusive criteria

- High risk pregnancies
- High risk baby like preterm and low birth weight
- Still birth

DATA COLLECTION TECHNIQUE

Procedure for data collection

Formal permission will be obtained from the hospitals administrator and informed consent from the mothers. Socio-demographic data will be collected from both the experimental and control group through structured interview schedule. Education regarding postnatal care to the mothers will be provided through video, demonstration, and poster to experimental group only and same will be withheld from the control group. Finally post-test will be conducted among both groups. Knowledge

will be assessed through questionnaire .Perception will be assessed through rating scale. Practice will be assessed through practice scale.

Development of the tool

Section A: Demographic Data- Age, Gravidae, education status of mother, occupation status of mother, and mode of delivery.

SECTION A: DEMOGRAPHIC DATA:

Demographic Variables of pregnant mothers	
Variable	**Distribution**
1.Age in years	a) 18-22 b) 23-26 c) 27-30 d) ≥31
2.Gravidae	a) Primigravidae b) Multigravidae
3.Education status of mother	a) No formal education b) Primary education c) Metric d) Senior secondary e) Graduate or above
4.Occupation status of mother	a) Housewife b) Private job c) Government job d) Other

5.Mode of delivery	a) Normal vaginal delivery b) Assisted vaginal delivery c) Caesarean delivery

Section B:

1. Structured knowledge questionnaire using interquartile range into three categories

Inadequate 0-50%

Moderate 51-75%

Adequate knowledge 76-100%

2. Perception rating scale (4 point scale)

Strongly agrees (4)

Agree (3)

Disagree (2)

Strongly disagree (1).

3. Practice scale (3 point likert scale)

Always (2)

Sometimes (1)

Never (0)

SECTION C: POSTNATAL HEALTH EDUCATION PACKAGE

S.No.	Parameter	Method of Teaching	Gap

1	Postnatal care	1. Postnatal diet 2. Postnatal exercise 3. Perineal/Episiotomy Care 4. Danger sign during the postpartum period	Sarkar J, Konwar G, Das LK (2014) concluded that inadequate knowledge and practice of postnatal exercises among postpartum mother. **Bintabara D (2017)** conducted study on Knowledge of obstetric danger signs among recently-delivered women .Major danger signs during the postpartum period include severe vaginal bleeding, foul-smelling vaginal discharge, and fever.
2	Newborn Care	1. Exclusive breast feeding 2. Immunization 3. Umbilical cord care 4. Danger sign in the newborn	**Amolo L, Irimu G, Njai D(2017**) stated Knowledge gaps existed regarding cord care, eye care, and immunization. **Sharma RK (2017)**conducted a study on Neonatal Danger Signs: The danger signs of severe illness included are 1) history of difficulty feeding, 2) movement only when stimulated, 3) temperature below 35.5°C, 4) temperature above 37.5°C, 5) respiratory rate over 60 breaths per min, 6) severe chest in drawings and, 7) history of convulsions.
3.	Postnatal counseling	1. Family planning methods 2. Postnatal visits	**Mishra P (2011)** conducted study on postpartum contraceptive use in rural Bareilly. This Study states that women' educational status on utilization of

			family planning methods has to be improved
Method of imparting education -Group teaching through discussion, Demonstration,vedio and Poster.			

DATA ANALYSIS TECHNIQUE

Objective	Data collection	Data scoring & analysis

1. To assess the effectiveness of postnatal health education package regarding postnatal and newborn care on knowledge, perception and practice among postnatal mothers. .	**Knowledge** will be assessed through questionnaire.	**knowledge questionnaire score key** will be categorized using interquartial range into three categories Inadequate 0-50% Moderate 51-75% Adequate knowledge 76-100%
	Perception will be assessed through rating scale.	**Perception Scoring will** be based upon four point scale ranging from Poor Perception 0-25% Average Perception 26-50% Good Perception 51-75% Very Good Perception 76-100%
	Practice will be assessed through practice scale.	**Practice Scoring –**items will be rated on a 3 point likert scale ranging from Poor Practices 0-50% Average Practices 51-75% Good Practices 76-100%
	Paired t test will be used to check the effectiveness between experimental and control group in terms of knowledge, perception and practice.	
2.To correlate among the level of knowledge ,perception and practice regarding postnatal and newborn care in postnatal mothers of experimental and control group	Correlation coefficient will be used to correlate the level of knowledge with level of perception ,level of knowledge with level of practice and level of perception with level of practice	
3. To associate the post-test	Post test knowledge score of	Chi square test will be used for

knowledge, perception and practice regarding postnatal and newborn care among postnatal mothers in the experimental and control group with their selected demographic variables.	experimental group and control will be associated with selected demographical variables such as Age, education status of mother, occupation status of mother, Gravida and mode of delivery.	association of knowledge with selected demographical variables.

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ANNEXURE – B

LETTER SEEKING EXPERT'S OPINION AND SUGGESTION FOR THE CONTENT VALIDATY OF THE TOOL

From,

_____

_____

_____

_____

To,

_____

_____

Respected Sir/Madam

Subject:- Request for expert opinion and suggestion to establish content validity of the research tool.

I_____ Phd scholar, Faculty of Nursing have undertaken a research project work on

_____

_____

_____

_____Which to be submitted to Bareilly International University, Bareilly for Partial fulfillment of Phd in Nursing.

I humbly request you to go through the content and give your valuable suggestions and opinion.

Thanking you

Yours Obediently

_____

ANNEXURE – C

CRITERIA PRACTICE SCALE FOR EVALUATION OF TOOL

Dear Sir/Madam

Kindly go through the tool content; give opinion in the columns given in the criteria table against to each question. If the item is not relevant, please give your valuable suggestion in the column.

I team No:	Not Relevant	Relevant to some extent	Relevant	Remark
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SECTION B:- Knowledge Questionnaire

I team No:	Not Relevant	Relevant to some extent	Relevant	Remark
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General Comments_____

_____

Date: **Signature of Experts**

Place: **Name of Designation**

SECTION C :- Perception Scale

I team No:	Not Relevant	Relevant to some extent	Relevant	Remark
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General Comments_____

_____

Date: **Signature of Experts**

Place: **Name of Designation**

CONSENT FORM

Dear Participant,

I _____ Phd scholar, as a part of partial fulfillment of the requirement for the degree of Phd in Nursing , I am interested to conduct a study on the topic " _____

_____

_____"

I request your kind Co-operation and active participation. I am sure that the information provided will be kept confidential and is used for the study purpose only. Kindly give your consent for the same.

Thanking You

Yours Faithfully

_____

( )

I am willing to participate in the study and I am aware that the information provided will be kept confidential and is used for the study purpose only.

Place:

Signature of Participant

LETTER REQUESTING PERMISSION TO CONDUCT MAINRESEARCH STUDY:-

From,

_____

_____

_____

To,

_____

_____

Subject:-Requesting permission to conduct main study.

Respected Sir/Madam

I_____ Phd scholar, Faculty of Nursing have undertaken a research project work on

_____

_____

_____

_____Which to be submitted to Bareilly International University, Bareilly for Partial fulfillment of Phd in Nursing.

This study is approved by the ethical committee of Bareilly international university. Regarding this main study, I am is in need of your esteemed help and co-operation as i am is interested in conducting a study in ----------

I request you to kindly permit me to conduct the proposed study and provide me the necessary facilities. I will furnish future details of the study, if required personally. Please do the needful. I assure that this study will not make any harmful effects on the subjects.

Thanking you in anticipation

Date:
Place:

Yours Faithfully

PRINCIPAL

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POSTNATAL HELATH EDUCATION PACKAGE

Training Module

2019

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Introduction- The first hours and days after childbirth are the most vulnerable period for both mothers and newborns. Quality postnatal care can reduce these risks and set the foundation for lifelong development and well-being.[1]

Definition -The **puerperium** covers the six-week period following birth, during which time the various anatomical and Physiological changes that occurred during pregnancy revert to the non-pregnant state. [2]

Objective: - By the end of this course, the postnatal mothers will be able to:

- Focus on Postnatal diet
- Perform Postnatal exercise
- Know importance of Perineal/Episiotomy Care
- Recognize the danger sign during the postpartum period

- Concentrateon Exclusive breast feeding
- Know the importance of Immunization
- do aseptic technique for Umbilical cord care

MODULE 1

POSTNATAL CARE

1. POSTNATAL DIET

1.1 Introduction:

Breastfeeding diet should focus on retaining the nutrient stores as it has an influence on the quality and quantity of breast milk. Nutritional requirements are maximum during lactation than at any other age in a woman's life. Hence the diet should be wisely chosen and balanced.

1.2 Dietary guideline :

1. Eat small meals frequently, preferably every three hours.
2. At every meal, fill half plate with a variety of colorful fruits or vegetables.
3. Make at least half the grains from whole-wheat rotis, brown rice, and whole grain cereal or meal items from jowar, bajra, oats or corn.
4. Intake of toned milk and milk products (up to 500 ml) every day is recommended for calcium requirement.
5. Add at least one serving of dark green leafy vegetables and a serving of fresh vegetable salad every day. Do not cut and wash or soak fruits and vegetables until you are ready to eat them.
6. Take good quality protein foods like eggs, fish, and chicken. Vegetarians can opt for soya nuggets, tofu, paneer and low fat cheese. Prefer whole grams or beans like chana, rajma, peas, moong, lobia at least one serving a day.
7. Use oil in moderation. Prefer cooking oils such as groundnut oil / ricebran oil / soya bean oil.
8. Include nuts, oil seeds and dry fruits in limited quantities every day. Almonds, walnuts, pistachios, flaxseeds and dried fruits such as dates, figs, prunes, and raisins are some of the options.
9. Fluids: Ensure optimal fluid intake every day. Apart from safe drinking water, fresh soups, buttermilk, and coconut water, are the healthier options.
10. Avoid replacing meals with snack foods.

Foods to be limited:

1. Beverages like tea, coffee bind dietary iron and make it unavailable. Hence they should be avoided before, during or soon after a meal.
2. Pickles, heavily salted foods like chips, pappads as they inhibit iron, calcium absorption.
3. Foods that is high in sugar and oil like sweets, soft drinks, chocolates, ghee and baked items.

1.3 Postnatal Diet Chart for postnatal women* (2200 Kcal approx)

Early morning: Milk – 1 cup / tea / coffee

Breakfast: Idly (3) / Pessarattu (2) / Veg upma ($1^{1/2}$ cup) +chutney (2 tbsp) + 1 cup sambar OR Chapatti (2) + vegetable curry OR Whole grain breakfast cereal (40g) with milk (200ml) + Egg (1) / Paneer (30g) [3]

Mid-morning: Soya milk / Ragi malt 150ml + Fruits (1 cup)

Lunch : Vegetable salad (1 cup) + phulka (2) + Brown rice (1/2 cups) + Non veg Proteins - Lean meat or Chicken (50 grams) / Veg Proteins - meal maker / Paneer (30 grams) + green leafy vegetables (1 cup) + other vegetables (1 cup) + curd / (yoghurt) – 100 ml

3.00 pm: Fruit (1) + Soya milk (150 ml) / Milk (150ml) / buttermilk – 200 ml

Evening: Oats (2 tbsp) / Ragi malt (2 tbsp) + Boiled Sprouts (1/2 cup)

7.00 pm: Veg. soup (1 bowl)

Dinner : Phulkas / bajra roti / jowar roti (80g flour) + green leafy vegetables (1 cup) + other vegetables (1 cup) + Non veg Proteins - Minced meat / fish (50 grams) / Veg Proteins - Soya granules (1/2 cup) / Dal (1/2 cup) + Curd (100 ml)

Bed-time : Milk (1 cup) + Nuts (8 - 10 nos.)

Note :1 cup = 200ml. Use 30g of fats or oil and < 5g salt during preparation of meal per day

1.4: Iron and Folic acid supplement

1.4: Iron and Folic acid supplements

Iron

Iron needs return to pre-pregnancy levels; unless blood loss exceeded the usual amount lost during a vaginal delivery (~500 mL).The consequences of anaemia resulting from iron deficiency during the postpartum period (six weeks after child birth) can be serious and have long-term health implications for the mother and her child.[4]

Sources of iron:

- Animal products – beef, chicken, pork or fish.
- Plant foods – dried beans, tofu, and fortified cereals.
- Cooking in cast-iron pans.
- More iron absorbed – vitamin C foods eaten with iron sources.

- Less iron absorbed – coffee or tea consumed with a meal.[5]
- Oral iron supplementation, either alone or in combination with folic acid, may be provided to postpartum women for 6–12 weeks following delivery for reducing the risk of anaemia in settings where gestational anaemia is of public health concerned.[6]

✓ In cases in which a woman is diagnosed with anaemia, she should be treated in accordance with the country's policy or the WHO recommendation of daily iron (120 mg of elemental iron plus 400 μg folic acid) supplements

✓ In malaria-endemic areas, provision of iron and folic acid supplements should be implemented in conjunction with measures to prevent, diagnose and treat malaria. In areas using sulfadoxine–pyrimethamine, high doses of folic acid should be avoided, as they may interfere with the efficacy of this antimalarial drug.

✓ Screening of all women for anaemia at postpartum visits, use of complementary measures to control and prevent anaemia, and a referral system to manage cases of severe anaemia.

✓ Oral supplements are available in capsules or tablets (soluble, dissolvable and modified-release tablets)

✓ Supplementsshould be manufactured, packaged and stored in a controlled and uncontaminated environment.

✓ Distributers and women should monitor the expiration dates of the supplements.

✓ Iron supplements are prepared using ferrous compounds (e.g. fumarate, gluconate, and sulfate) that are better absorbed then ferric iron .[7]

2. POSTANATAL EXERCISE

2.1 Introductions

Postnatal exercises are important after childbirth. They not only make body fit and alert but are also important for overall well-being. It is always ideal to start doing gentler exercises during the first few weeks after the delivery.

2.2 Benefit and principle of post natal exercise

. The postnatal exercises ideally help in the following ways:

1. Help enhance mood by increasing the release of good chemicals.
2. Heal pregnant body by getting rid of aches and pains.
3. Help in weight loss management if pursued along with a balanced diet.

4. Replenish tired body with vigor and vitality that need to raise baby.
5. Enhance the stamina levels, helping to take charge during motherhood.
6. Tone body and make it flexible.
7. Reduce the heavy postnatal depression with a healthy mind.[8]

Principles of exercise:

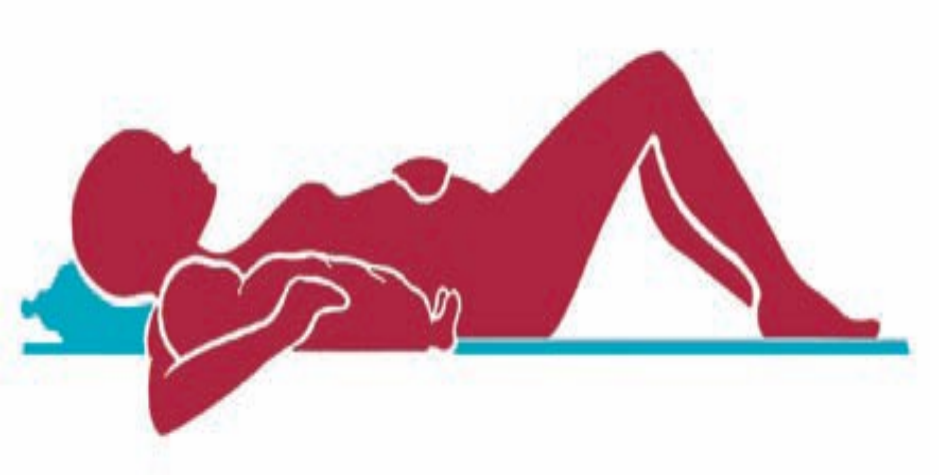
- ✓ Frequency
- ✓ Intensity- mild to moderate exercise are recommended
- ✓ Duration-30 minutes of exercise per day

Types of postnatal exercise:

- Deep breathing Exercise
- Foot and ankle exercise
- Pelvic floor Exercise
- Pelvic Tilting Exercise
- Abdominal Breathing
- Head and shoulder raising
- Leg raising
- Knee rolling
- Hip hitching or leg shortening.

1. Deep breathing Exercise

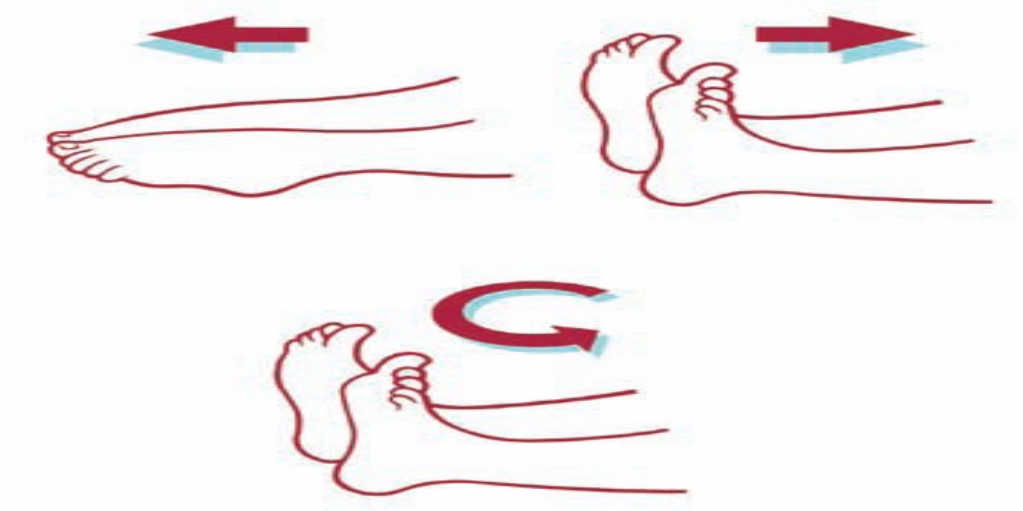
- Lie on bed with knees bent, with a pillow behind



- Breathe in deeply through nose. Sigh out.
- Repeat 5 times

2. Foot and ankle exercise

- Keep knees relaxed for both exercises.
- Bend and stretch ankles vigorously up and down for 30 seconds.



- Circle both feet 10 times in each direction.
- Repeat these exercises frequently

3. Pelvic floor Exercise

- Pelvic floor muscles are stretched during pregnancy and childbirth.
- Strong pelvic floor muscles are essential to prevent leakage of urine when sneeze or cough, for enjoyable sexual intercourse and can do this exercise standing, sitting or lying.

- Pull the area around vagina up and down
- The contraction should be held for 10 seconds (to a count of 6) and repeated upto 10 times to give complete control of bowels.
- Strong muscles will also help prevent developing a prolapsed womb

4. Pelvic Tilting Exercise

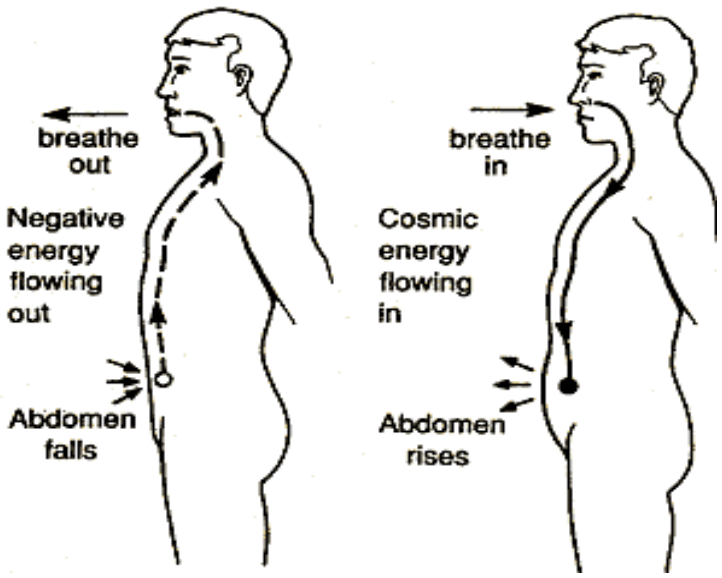
- Lie on a firm surface with knees bent and a comfortable pillow beneath the head.
- Pull in your tummy (inhale while exhale flatten the back).

- Press the lower part of back down flat.
- Hold for several seconds and repeat.

5. Abdominal Breathing

- This is to strengthen the diaphragm.
- Take a deep breath, raising her abdominal wall and exhale slowly.

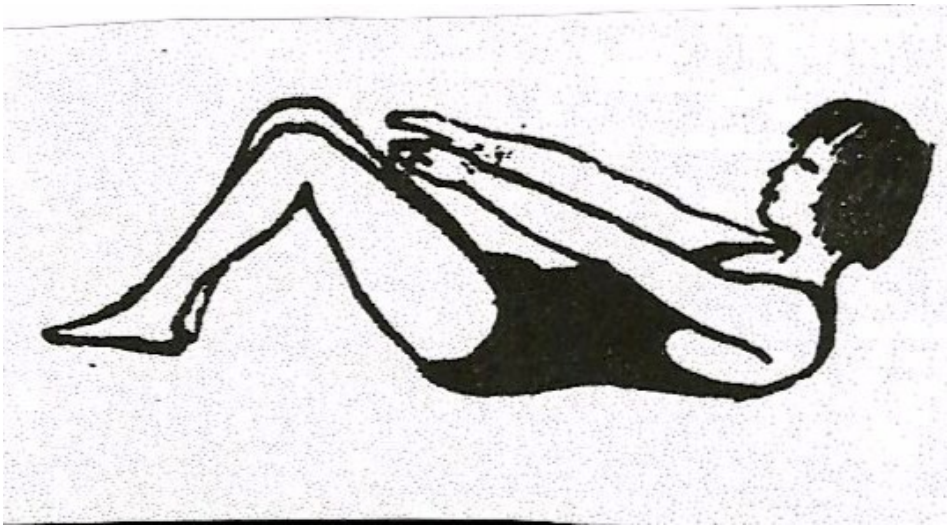
The Rise and Fall of the Abdomen



- To ensure correct method ask to keep one hand on chest and one on abdomen, while inhaling the hand on the abdomen should be raised and hand on the chest should remain stationary.
- Repeat the exercise five times.

6. Head and shoulder raising

- On the 2nd post partum day-Lie flat and raise head until the chin is touching the chest.



- On the 3rd post partum day-raise both head and shoulder off the bed and lower them slowly, increase gradually.

7. Leg raising

- Begun on the 7 the post partum day.
- Lying down on the floor with no pillows under the head.

- Point toe and slowly raise one leg keeping the knee straight.
- Lower the leg slowly.

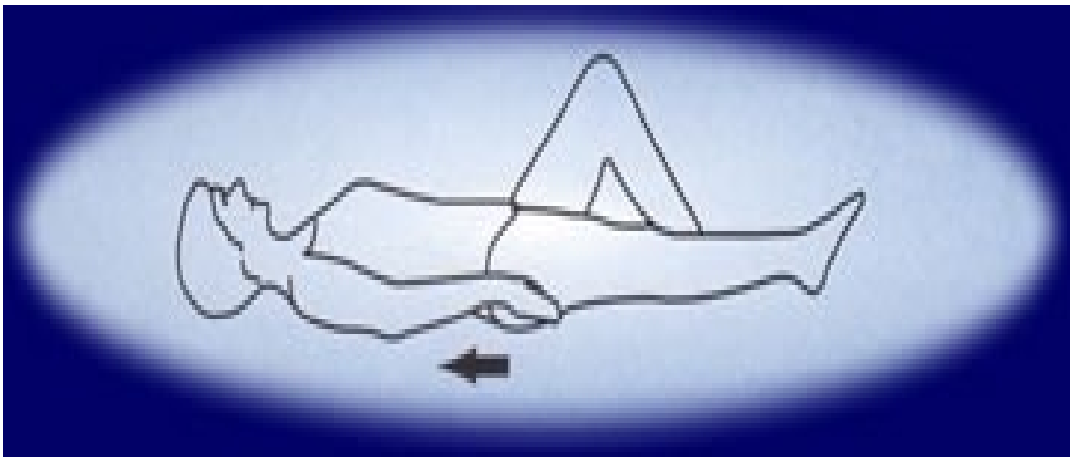
8. Knee rolling

- This is to strengthen the oblique abdominal muscles.
- In back lying with knees bent, pull in the abdomen and roll both knees to one side as far is comfortable, keeping shoulders flat. Return knees to upright position and relax the abdomen.

- Pull in again and roll both knees to other side.
- Perform 10 times

9. Hip hitching or leg shortening.

- In back lying with one knee bent and the other knee straight.
- Slide the heel of the straight leg down word thus lengthening the leg.



- Shorten the same leg by drawing the hip uptowards the ribs on the same side.
- Repeat up to 10 times
- Change to the opposite side and repeat.[9]

3. PERINEAL/EPISIOTOMY CARE

3.1-Introduction

The perineum is the area of skin and muscle between vagina and anus. The perineum stretches and thins out over baby's head at the time of delivery [10]An episiotomy is an incision (cut) between the vagina and the anus to prevent tearing during delivery. The incision is sewn back together right after baby's birth. Perineal care will help perineum heal faster, feel better, and help prevent infection continue doing perineal care for 1 to 3 weeks after giving birth.[11]

What to avoid

- Salt or antiseptic baths
- Talcum powder, lotions or creams until the skin has healed
- Sitting on a circular (doughnut) cushion (as it can cause swelling of the perineum)
- Heat (hot packs, hot water bottles, heat lamps)
- Squatting, or any position where your legs are opened wide (eg sitting cross-legged, taking stairs 2 at a time).[10]

3.2 Perineum Care at Home

After delivering the baby, the perineum must be kept clean. Lochia may drain for up to four weeks, so pads should be changed frequently.

- Do not use tampons after delivery. Tampons may cause an infection.
- Take a bath or a shower once or twice daily. A sitz bath can be used after every bowel movement. A sitz bath involves sitting in shallow water, only deep enough to cover the hips and buttocks.
- Urinating can be painful after delivery. Squirting warm water over the perineum during urination may ease the pain. When finished urinating, gently pat the perineum dry.
- Cold sitz baths help reduce swelling and discomfort after delivery. Sit in a lukewarm or room temperature bath, and then gradually add ice cubes to the water. This prevents the uncomfortable, sudden sensation of ice water on the skin. Soak for 20 minutes at a time, up to three to four times a day. After the first two to three days, warm sitz baths will improve blood flow to the perineum. Check with physician before adding medications such as epsom salts to the bath. An alternative may be ice placed in a sealed plastic bag.
- Hemorrhoids are enlarged veins in the wall of the anus. They frequently occur during pregnancy and often go away without treatment after delivery. Hemorrhoids may bleed after bowel movements. If the hemorrhoids are painful, steroid suppositories may lessen the discomfort.
- Stay well hydrated by drinking plenty of water. Straining with bowel movements will stretch the episiotomy scar and perineum and can cause pain. Avoid constipation by eating fiber-rich foods such as fresh fruits and vegetables.
- Using an inflatable “doughnut” cushion when sitting or lying down may help reduce pull on the episiotomy scar.
- Kegel exercises strengthen and tone pelvic muscles and lessen perineal pain. Kegel exercises are small movements of the vaginal muscles similar to stop urinating.
- Take acetaminophen (Tylenol) or ibuprofen (Motrin) if their is no allergy for controlling pain. Both drugs are safe for a mother who is breastfeeding. Ibuprofen in particular is very helpful for episiotomy pain and postpartum uterine pain.

- Avoid sexual intercourse until perineal pain. Most health care providers recommend pelvic rest until four weeks after delivery, but there are no clear guidelines. use lubricant for sex, make sure it is water-soluble.[12]

4. DANGER SIGN DURING THE POSTPARTUM PERIOD

4.1 Introduction

Mother should go to the hospital or health centre immediately in case of vaginal bleeding has increased,fits,fast or difficult breathing, fever and too weak to get out of bed, severe headaches with blurred vision, calf pain, redness or swelling; shortness of breath or chest pain. She should go to the health centre as soon as possible if she hasswollen, red or tender breasts or nipples, problems urinating, or leaking, increased pain or infection in the perineum, infection in the area of the wound (redness, swelling, pain, or pus in wound site),smelly vaginal discharge, severe depression or suicidal behavior (ideas, plan or attempt)[13]

➢ Signs and symptoms of infection

- **Fever higher than 100.4 F.**
- **Discharge, pain or redness that doesn't go away or gets worse around a c-section incision (cut), episiotomy or perineal tear**[14]
- **Pain or burning during urination, pain in lower back or side or needing to pee often.** Urinary tract infection (also called UTI), like a bladder infection called cystitis or a kidney infection called pyelonephritis.
- **Red streaks on breasts or lumps in breast that are new and hurt.** Breast infection called mastitis. Delay breastfeeding or breasts become engorged (swollen and full of milk).
- **Severe pain in lower belly.** endometritis. This is inflammation (redness or swelling) in the lining of the uterus.
- **Vaginal discharge that smells bad.** endometritis or an infection called bacterial vaginosis (also called BV).

Sometimes the body has an extreme response to infection called sepsis. signs or symptoms of sepsis after giving birth:

- Chills or feeling very cold
- Clammy or sweaty skin
- Fast breathing
- Fast heart rate
- Feeling confused
- Fever
- Having extreme pain or discomfort

➢ **Signs and symptoms of other postnatal complication**

- **Bleeding heavier than normal period or bleeding that gets worse over time.** Postpartum hemorrhage (also called PPH). PPH is when a woman has heavy bleeding after giving birth. It's a serious, but rare condition that can happen up to 12 weeks after having a baby.
- **Pain, swelling, redness, warmth or tenderness in legs, especially in.** Deep vein thrombosis (also called DVT). This happens when a blood clot forms deep in the body, usually in the lower leg or thigh.
- **Changes in vision, dizziness, severe headache, pain in the upper right belly or in the shoulder, trouble breathing, sudden weight gain or swelling in the legs, hands or face.** Postpartum preeclampsia. This is a serious condition that happens when a woman has high blood pressure and signs that some of organs like kidneys and liver, may not be working normally after giving birth.
- **Chest pain, coughing or gasping for air.** Pulmonary embolism (also called PE). An embolism is a blood clot that moves from where it formed to another place in the body. When the clot moves to a lung, it's PE. PE is an emergency.
- **Feeling sad or hopeless for more than 10 days after giving birth.** Postpartum depression (also called PPD), a kind of depression some women get after having a baby. PPD is strong feelings of sadness, anxiety (worry) and tiredness that last for a long time after giving birth. These feelings can make it hard to take care yourself and y baby. PPD is a medical condition that needs treatment to get better.
- **Feeling sick to stomach or throwing up.** PPH or cardiovascular disease (also called heart disease). Heart disease includes conditions that affect the heart and blood vessels. They often affect the heart muscle or involve narrowed or blocked blood vessels that can lead to a heart attack or stroke.[14]

Module 2

NEWBORN CARE

5. EXCLUSIVE BREAST FEEDING

Exclusive breastfeeding means that a baby is fed only breast milk for the first six months of its life, with no additional food or drinks. This is the best nourishment for a baby and such babies are not even given water.

Benefits of EBF

1. Scientific studies have revealed that the healthiest babies are those that have been exclusively breastfeed.
2. For the first six months of a baby's life, breast milk is all that a baby really needs.
3. Exclusive breastfeeding is known to considerably decrease infant mortality on account of common childhood illnesses.
4. It delays fertility assisting appropriate time intervals between pregnancies.
5. Mothers are less prone to the cancer of the breast and ovaries.
6. It minimizes the chances of a baby getting diarrhea, allergies, pneumonia and suffering from malnutrition.

5.2 Frequency and duration of breastfeeding

1. Since the baby is only given breast milk, the frequency of feeding depends on the baby; feeding should be done as per the baby's demand. This means that feeding a baby at least 8 to 12 times in a day.
2. Night time breastfeeding should be made possible by co-sleeping with the baby.
3. Duration of breastfeeding again depends on the baby's needs. Each session could last between 20-45 minutes.
4. The baby should be satisfied feeding from one breast before another is offered.[15]

5.3 General principles of exclusive breastfeeding

- Encourage early and exclusive breastfeeding whenever possible.

- Explain to the mother and her family the benefits of early and exclusive breastfeeding:
- Breast milk contains the exact nutrients the baby needs and promotes the babies development:
- Breast milk is easily digested and efficiently used by the baby's body;
- Breast milk protects the baby from infection;
- Breastfeeding can be used as a contraceptive method (lactationalamenorrhoea method).
- Encourage the mother to breastfeed the baby on demand, both day and night (eight or more times in 24 hours), for as long as the baby wants.
- Have the mother offer the second breast once the baby releases the first breast on her/his own.

- Advise the mother that she a feed before the baby is done;
- Use artificial teats or pacifiers;
- Give the baby any other food or drink (e.g. commercial breast milk substitute, animal milks, local porridges, tea, water, etc.) other than breast milk for the first six months of life.
- Include the mother's partner, a family member, or other support person in discussions about breastfeeding, if possible.
- Eat nutritious food and has enough to drink.
- Medication will not harm baby while she breastfeeds; however, if the mother is taking cotrimoxazole or pyrimethamine with sulfadoxine, monitor the baby for jaundice.

Correct positioning and attachment for breastfeeding

- Attach when the baby seems to be ready. Signs of readiness to suckle include opening the mouth, rooting or searching, looking around, and moving.
- Holding baby during breastfeeding. She should:

- Hold the baby in skin-to-skin contact, if possible;
- Hold the baby's head and body straight so that the baby faces breast, with the baby's nose near nipple;
- Support the baby's whole body, not just the neck and shoulders.

- Encourage baby to attach.
  - Touch the baby's lips with nipple;
  - Wait until the baby's mouth is opening wide;
  - Move the baby quickly onto breast, so that the baby's lower lip is well below the nipple.
- Assess attachment on the breast and suckling.. Signs of correct attachment are:
  - Baby's chin touches the breast;
  - Baby's mouth is wide open with the lower lip curled out;
  - More of the areola is visible above than below the mouth;
  - Baby suckles with slow, deep sucks and pauses sometimes.
- If breasts are engorged, express a small amount of breast milk before beginning to breastfeed. This will soften the area around the nipple so that it is easier for the baby to attach.

Breastfeeding twins

- Reassure the mother that she has enough breast milk for both babies.
- Begin feeding one baby at a time until breastfeeding is well established in both babies;
  - Ensure that the weaker twin gets enough milk;
  - Rotate at every breastfeeding the breast each baby is offered;
  - Give expressed breast milk using an alternative feeding method (below) after the initial breastfeed, if necessary.[16]

5.5 Breast disorders and management in postnatal period

1. Breast Engorgement

Usually occurs in the 3rd day after delivery when secretion of milk begins.

Clinical picture

- Breasts are over distended with visible dilated veins.
- Breasts are painful and tender.

- Pyrexia may develop.

Treatment

- Breast evacuation: in early stage baby suckling can be sufficient, but later on congestion press on the ducts preventing flow of milk so an electric breast pump is needed.
- Cold fomentations or one-two doses of bromocriptine (2.5 mg): may occasionally needed and there is no risk of suppressing lactation.
- Analgesics -antipyretics.

2. Deficient Lactation

Causes

- Constitutional.
- Bad general condition and malnutrition.
- Infrequent or irregular suckling.
- Sheehan's syndrome.

Treatment

- Regular breast feeding.
- Good diet and plenty of fluids.

3. Cracked Nipples

Causes

- Lack of cleanness and dryness of the nipples.
- Vigorous suckling of a hungry baby in deficient lactating breasts.
- Leaving the baby too long at the breast.
- Repeated taking and leaving the nipple by the baby to breathe if its nose is obstructed by the breast.
- Monilial infection.

Treatment

- Rest: the baby should not put on the affected breast till healing occurs while it is emptied manually. Gradual going back to the breast is recommended to prevent recurrence.
- Hot fomentations.
- Panthenol ointment or flavine in liquid paraffin: applied locally.

4. Acute Mastitis

Causative organism

Staphylococcus aureus which may reach the breast from infected baby.

Clinical picture

- Breast is painful, tender, red, tense and hot.
- Axillary lymph nodes are enlarged.
- High fever may reach 40.5^0C.

Treatment

- Proper treatment is indicated otherwise breast abscess will develop.
- Stop lactation: from the affected breast and breast is emptied manually or by an electric pump. When the acute phase is over breast feeding can be resumed.
- Support the breast: over a pad of cotton wall.
- Antibiotic therapy: A sample of milk is sent for culture and sensitivity then antibiotic started. Flucloxacillin 500 mg/6 hours is suitable.
- Analgesics - antipyretics.

5. Breast Abscess

Clinical picture

- A segment of the breast becomes painful and tender and fluctuation can be detected.
- The skin over it is oedematous.
- Fever and enlarged axillary lymph nodes.

Treatment

As soon as an abscess is formed it should be incised and drained under general anaesthesia. Do not wait for fluctuation as by that time breast disorganisation would occur.

6. Galactocele

- It is a retention cyst of a large mammary duct due to its obstruction.
- If it is persistent it is excised or aspirated.[15]

6: IMMUNIZATION

A **vaccination schedule** is a series of vaccinations, including the timing of all doses, which may be either recommended or compulsory, depending on the country of residence. This topic can cause much controversy over whether or not it could impact health after dosage at an early age.[16]

Pregnant women:

There is no change in the immunization schedule for pregnant women.

National Immunization Schedule (NIS) for Infants, Children and Pregnant Women

Vaccine	When to give	Dose	Route	Site
For Pregnant Women				
TT-1	Early in pregnancy	0.5 ml	Intra-muscular	Upper Arm
TT-2	4 weeks after TT-1*	0.5 ml	Intra-muscular	Upper Arm
TT- Booster	If received 2 TT doses in a pregnancy within the last 3 yrs*	0.5 ml	Intra-muscular	Upper Arm

Infants:

There are several changes here:

1. **IPV**: Following the switch, IPV has been introduced as two fractionated doses at 6 and 14 weeks, respectively. OPV continues to be administered at 6, 10 and 14 weeks.

2. **MR vaccine**: In several states, MR vaccination campaign was initiated. Following the campaign, those states would offer MR#1 between 9-12 months; and MR#2 between 16-24 months. The remaining states would continue offering Measles between 9-12 months; and Measles Containing Vaccine #2 (MCV2) between 16-24 months.

3. **Kerala** has been offering MMR vaccine instead of MCV2 for some time now. Therefore, the state government took a policy decision to offer MR vaccine between 9-12 months; and MMR between 16-24 months instead of MR#2.

4. **Rotavirus vaccine**: This has also been introduced in a phased manner. It is an oral vaccine, and can be administered up to 1 year of age. It is scheduled for administration at 6, 10 and 14 weeks. Unlike OPV, the dose of this vaccine is 5 drops.[17]

The immunization schedule for infants is as follows:

For Infants				
BCG	At birth or as early as possible till one year of age	0.1ml (0.05ml until 1 month age)	Intra-dermal	Left Upper Arm
Hepatitis B - Birth dose	At birth or as early as possible within 24 hours	0.5 ml	Intra-muscular	Antero-lateral side of mid-thigh
OPV-0	At birth or as early as possible within the first 15 days	2 drops	Oral	Oral
OPV 1, 2 & 3	At 6 weeks, 10 weeks & 14 weeks (OPV can be given till 5 years of age)	2 drops	Oral	Oral
Pentavalent 1, 2 & 3	At 6 weeks, 10 weeks & 14 weeks (can be given till one year of age)	0.5 ml	Intra-muscular	Antero-lateral side of mid-thigh
Rotavirus#	At 6 weeks, 10 weeks & 14 weeks (can be given till one year of age)	5 drops	Oral	Oral
IPV	Two fractional dose at 6 and 14 weeks of age	0.1 ml	Intra dermal two fractional dose	Intra-dermal: Right upper arm
Measles /MR 1st Dose$	9 completed months-12 months. (can be given till 5 years of age)	0.5 ml	Sub-cutaneous	Right upper Arm
JE - 1**	9 completed months-12 months.	0.5 ml	Sub-cutaneous	Left upper Arm
Vitamin A (1st dose)	At 9 completed months with measles-Rubella	1 ml (1 lakh IU)	Oral	Oral

Children:

The notable change includes the MR#2 vaccine between 16-24 months.

For Children				
DPT booster-1	16-24 months	0.5 ml	Intra-muscular	Antero-lateral side of mid-thigh
Measles/ MR 2nd dose $	16-24 months	0.5 ml	Sub-cutaneous	Right upper Arm
OPV Booster	16-24 months	2 drops	Oral	Oral
JE-2	16-24 months	0.5 ml	Sub-cutaneous	Left Upper Arm
Vitamin A* (2nd to 9th dose)**	16-18 months. Then one dose every 6 months up to the age of 5 years.	2 ml (2 lakh IU)	Oral	Oral
DPT Booster-2	5-6 years	0.5 ml.	Intra-muscular	Upper Arm
TT	10 years & 16 years	0.5 ml	Intra-muscular	Upper Arm

Memory-aide:

#1. **Two vaccines** are administered in the **left upper arm**: BCG and JE

#2. **Two vaccines** are administered in the **right upper arm**: Measles/MR and IPV

#3. **Two vaccines** are administered **intradermal**ly: BCG and IPV

#4. **Two vaccines** are administered **oral**ly: OPV and Rotavirus

#5. **Two vaccines** are administered **subcutaneous**ly: Measles/MR and JE

#6. **Two injectable vaccines do not have a dose of 0.5 ml**:

- BCG: 0.1 ml (0.05 ml up to 1 month age)
- IPV: 0.1 ml[17]

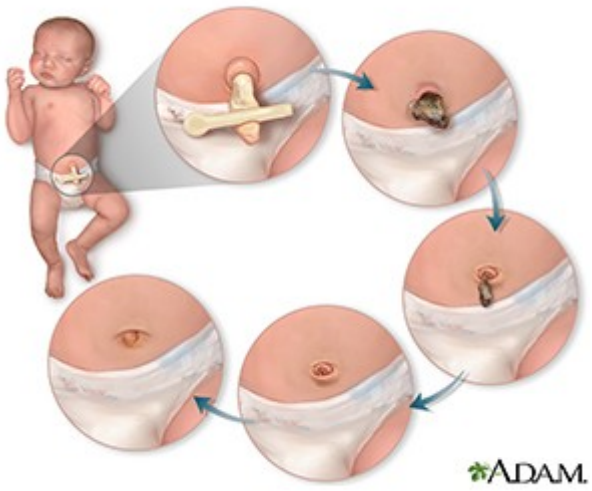
7. UMBILICAL CORD CARE

Cord care is how to care for baby's umbilical cord stump. Before birth, the umbilical cord brings nutrition and oxygen and removes waste. After birth, baby does not need the umbilical cord anymore. Healthcare providers cut off all but a small part (stump) of the umbilical cord. The stump dries and falls off in about 7 to 21 days, leaving a bellybutton. baby's cord will feel cool and look blue-white right after birth. After it is clamped, it will start to dry and turn yellow-brown. It will become hard, and there may be some sticky wetness at the bottom of the stump. The stump will soon dry out, turn black, and fall off. It is normal for the stump to stay on longer if babyis premature. Few drops of blood around the stump as it begin to fall off.

Discharge Instructions: contact in case

- If baby is less active than usual, is not eating well, and has a fever.
- The skin around baby's umbilical stump feels hard or thick.
- The skin on baby's abdomen looks bruised.
- Baby is having problems in swallowing.
- Baby's neck, shoulders, back, or abdomen feels stiff, or your baby cries when touched.

- Cord stump looks red or swollen.
- Yellow or green discharge around the base of the stump.
- Stump smells bad, even after you clean it.
- Baby's cord stump has not fallen off after 21 days.
- Fluid leaking from a pink or red scar on your baby's belly button after the stump comes off.



Care of baby's umbilical cord stump:

- **Wash your hands.** Use soap and water. Wash hands before and after clean stump.
- **Clean the cord stump.** Gently wash the cord stump and the skin around it with mild soap and warm water during every bath. Gently pat the stump dry after baby's bath.
- **Use rubbing alcohol or water.** use rubbing alcohol or water and a cotton swab to clean the stump. Gently wipe from the base to the top of the stump with a cotton swab dampened with rubbing alcohol or water. Clean the stump with each diaper change.
- **Clean urine or bowel movement off the stump.** If baby's stump gets dirty from urine or bowel movement, wash it off right away with water. Gently pat the stump dry after cleaning it.
- **Let the cord air dry.** After diaper changes or stump cleaning, fold the front of the diaper down below the cord stump to let it air dry.
- **Dress baby in loose clothing.** Loose-fitting clothes will help the stump dry out faster.
- **Do not pull or tug at the cord stump.** The stump will fall off on its own.
- **Do not cover the cord stump**.[18]

8: DANGER SIGN IN THE NEWBORN

In addition to advising parents and the family on general care of the newborn, it is important to alert them to danger signs.

As for the mother, there are also danger signs for the newborn that mothers and families need to identify and respond to immediately. Think about how to discuss and review this information with families. Consider obtaining or developing support materials, which will help you to communicate this information more effectively and that will help women and their families to remember the danger signs.[7]

It is important that mothers, care givers and health workers are able to recognize the signs and symptoms which indicate that the baby is not well ('DANGER SIGNS'). Early recognition of the danger signs will help in identifying those babies who need urgent care and treatment.[7]

The important danger signs in the newborn are:

- ✓ Convulsions
- ✓ Movement only when stimulated or no movement, even when stimulated
- ✓ Not feeding well
- ✓ Fast breathing (more than 60 breaths per minute),grunting or severe chest in-drawing
- ✓ Fever (above 38°C)
- ✓ Low body temperature (below 35.5°C),
- ✓ Very small baby (less than 1500 grams or born more than two months early)
- ✓ Bleeding
- ✓ Moderate or severe chest in-drawing
- ✓ Jaundice on day 1 or palms or sole stained yellow any age
- ✓ Abnormal movements.[19]

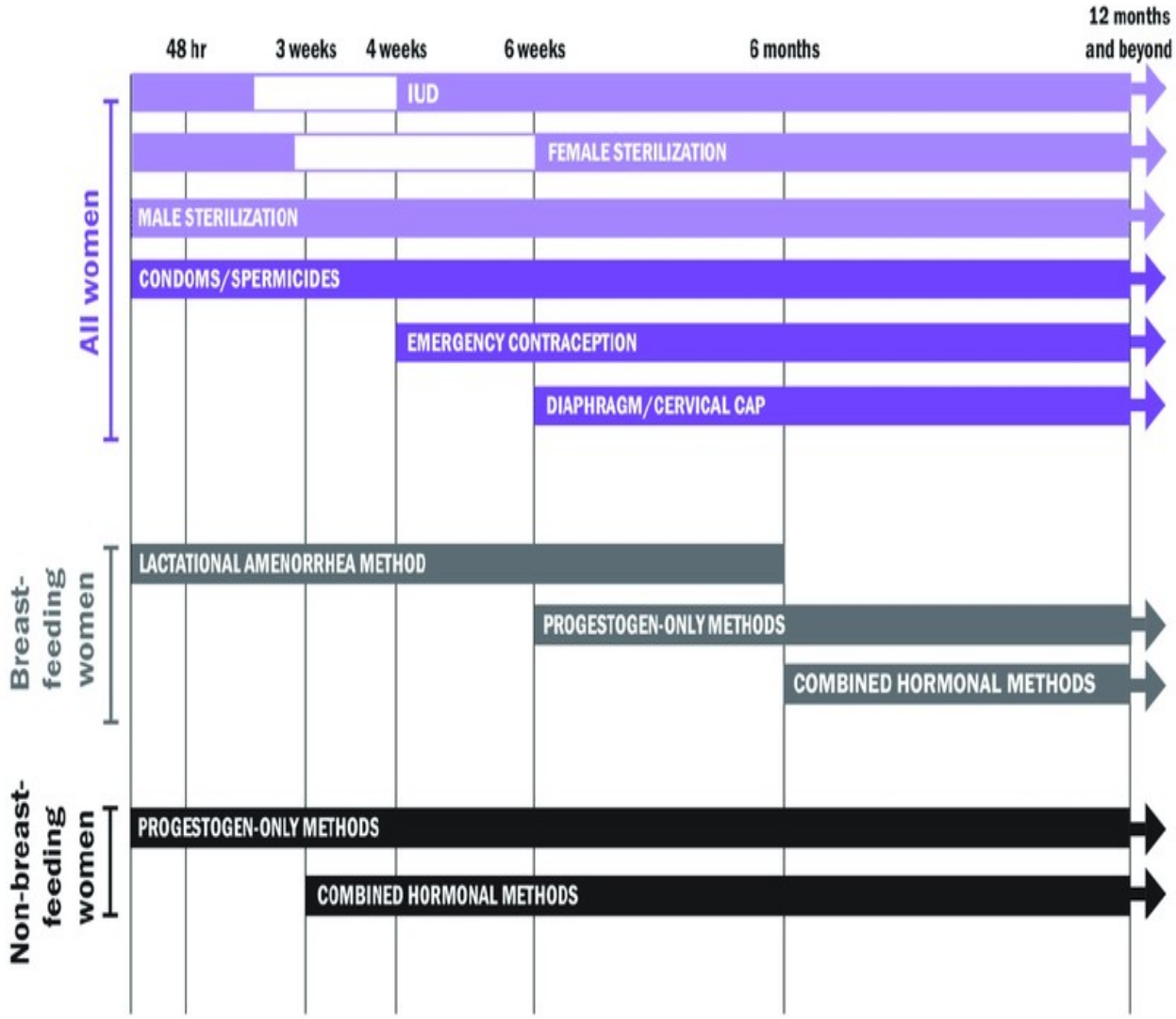
MODULE -3

POSTNATAL COUNSELING

9.1 FAMILY PLANNING NEEDS OF POSTPARTUM WOMEN

WHO recommends the following regarding the use of contraception among women during the first year postpartum and beyond: –

1. Immediately after birth and for up to 6 months following a birth, a woman who is exclusively breastfeeding can use the lactational amenorrhea method (LAM).
2. A copper-bearing intrauterine contraceptive device (IUD) can be inserted immediately or up to 48 hours after birth, or any time after 4 weeks postpartum. A female sterilization procedure or tubal occlusion (TO) can be performed immediately or up to 4 days after birth, or any time after 6 weeks postpartum.
3. For non-breastfeeding women, in addition to IUD and TO, progestogen-only methods can be initiated immediately following birth. Combined oral contraceptives can be initiated starting at 3 weeks after birth.
4. For breastfeeding women, all progestogen-only methods – a progestogen-only pill, injections, implants – can be initiated at 6 weeks following birth, as per WHO MEC. Combined estrogen and progestin pills cannot be initiated until 6 months after birth.
5. All women, breastfeeding or not, can initiate use of condoms immediately after birth, emergency contraception after 4 weeks, and the diaphragm or cervical cap after 6 weeks.[20]



Contraception is not needed in the first 21 days after delivery

Breastfeeding can also be a form of contraception for the first six months after giving birth

Contraception That Can Be Used Immediately

Some types of contraception can be used immediately after delivery. We recommend progestogen-only methods, which research shows has no effect on breast milk volume, or on infant-growth.

- **Contraceptive implant** can be inserted immediately after delivery.

- **Depo Provera injection** – the injection is given every 12 weeks and is very effective. It can be started immediately.
- **Progestogen-only pill** – a six-month supply can be prescribed and can be started immediately.
- **Condoms** – condoms are a safe and affordable option and can be used at any time.
- **Emergency contraceptive pill** – the ECP can be used any time after delivery and can be taken up to four days after sex – although the sooner the better.The ECP is less effective for women who weigh more than 70kg, so an emergency IUD is the best option in this instance.

Other methods of contraception

- **Intra uterine device (IUD)** – a copper or hormonal IUD can be inserted immediately after delivery, but it is more common to have it inserted six weeks after delivery. It lasts for five or more years (depending on the type of device) but it can be removed at any time. .
- **Combined oral contraceptive *pill*** –.
  -If you're not breastfeeding – it can be given l 21 days after delivery.
  -If you're partially breastfeeding – it can be given after six weeks.
  -If you're fully breastfeeding – it can be given after six months.
- **Vaginal ring** – when you can start using the NuvaRing depends on whether you are breastfeeding and on your BMI. The length of time you must wait is the same as for the pill.[21]

9.2 POSTNATAL VISITS

If birth is in a health facility, mothers and newborns should receive postnatal care in the facility for at least 24 hours after birth. If birth is at home, the first postnatal contact should be as early as possible within 24 hours of birth.

At least three additional postnatal contacts are recommended for all mothers and newborns, on day 3 (48–72 hours), between days 7–14 after birth, and six weeks after birth.[22]

It is also an important opportunity to ensure the establishment of breastfeeding and address any difficulties with attachment and positioning.

● Postnatal contacts also occur at clinic visits.[22]

First visit (could be home visit)	Within 1 week, preferably on day 3
Second visit	7-14 days after birth
Third visit	4-6 weeks after birth

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DEMOGRAPHIC DATA:

Variable	Distribution
1.Age in years	a) 18-22 b) 23-26 c) 27-30 d) ≥31
2.Gravidae	a) Primigravidae b) Multigravidae
3.Education status of mother	a) No formal education b) Primary education c) Metric d) Senior secondary e) Graduate or above
4.Occupation status of mother	a) Housewife b) Private job c) Government job d) Other
5.Mode of delivery	a) Normal vaginal delivery b) Assisted vaginal delivery c) Caesarean delivery

BLUE PRINT OF QUESTIONNAIRE

S.NO	Module 1: postnatal care	Question no	Percentage
1	Postnatal diet	**1-12**	**26.66%**
2	Postnatal exercise	**13-17**	**11.11%**
3	Perineal/Episiotomy Care	**18-20**	6.6%
4	Danger sign during the postpartum period	**21-24**	8.88**%**
	Module 2: Newborn Care		
5	Exclusive breast feeding	**25-33**	20**%**
6	immunization schedule	**34-36**	6.66**%**
7	Umbilical cord care	**37-38**	4.44**%**
8	Danger sign in the newborn	**39**	2.22**%**
	MODULE 3: POSTNATAL COUNSELING		
9	Family planning methods	**40-45**	13.33**%**
	Postnatal visits		

Section-B

Structured Knowledge Questionnaire

Instruction- The interviewer will ask following questions to the participant and tick (√) on response given by postnatal mothers.

Q1-What is postnatal period?

A -Period of before delivery
b- Period during the time of delivery
c- Period of after delivery
d- Period of adolescent

Q2 what is the use of the Iron?

a. Increase the Blood Haemoglobulin Level
b. Increase the Blood sugar level
c. Increase the Blood Pressure Level
d.Increses the sodium level

Q.3 which diet to be taken to relieve from the constipation?

a. Carbohydrate Rich diet
b. Fiber rich diet.
c. Fat rich diet.
d. Protein rich diet

Q.4 which is the richest source in the sunlight?

a. Vitamin A
b. Vitamin C
c. Vitamin D
d. Vitamin K

Q.5 what is the function of calcium?

a. To improve the bones strength.
b. To improve the skin.
c. To improve the vision.
d.To improve digestion

Q 6. Small meals should be taken for how many hours?

a) Every two hours
b) Every three hours
c) Every four hours

d) Every five hours

Q7- Why the hand hygiene is considered to be very important?

a. To prevent digestion
b. To prevent injury.
c. To prevent accident.
d. To prevent infection.

Q8. Food which is limited during postnatal period?

a- Coconut water
b- Dried fruits
c- Egg& fish
d- Soft drinks & pappads

Q9-How many weeks the iron & folic acid should provided to postpartum women?

a-upto 6 weeks
b-6-12 weeks
c-12-18 weeks
d-18-25 weeks

Q10-Which condition occurs with low level of iron?

a-Anemia
b-Cardiac diseases
c-Jaundice
d-Hepatitis

Q11-What are the main sources of iron?

a-All leafy vegetable
b-Coffee or tea
c-Junk food
d- Non-leafy vegetable

Q12-How much iron supplements need to be taken by postnatal mother per day?

a-60-120 mg
b-120-180 mg

c-180-240 mg
d-240-300 mg

Q.13 why the early Ambulation is essential for the post natal mother?

a. Improves circulation.
b. Prevents injury.
c. Prevents Lesions.
d.Prevent laceration

Q.14 How to prevent the leg cramps and DVT?

a. Doing Breathing Exercise.
b. Doing foot & leg exercise.
c. Doing pelvic exercise;[
d. Abdominal tightening exercise

Q 15- Which exercises was help to tighten the pelvic muscles?

a-Breathing exercise
b-Foot and ankle exercise
c-Head and shoulder raising
d-Kegal exercise

Q16-What is the duration of exercise per day?

a-10 minutes
b-20 minutes
c-30 minutes
d-40 minutes

Q17-Which exercise is used to strengthen the diaphragm?

a-Abdominal breathing
b-Leg raising
c-knee rolling
d-Head raising

Q. 18 when the mother should have perineal wash?

a. **After Defecation and urination.**
b. After food

c. After breast feeding.
d.After hair wash

Q19 what is the time interval to change the sanitary pads?

a. 12 Hours.
b. 9 Hours
c. 6 Hours
d.24 hours

Q20-Which of the method is help to reduce the swelling & discomfort in postnatal women?

a-Rest
b- Exercise
c Cold sitz bath
d.normalwater

Q 21 how long sexual relationship should be avoided after delivery

a- Until perineal pain disappear or after 4-6 weeks
b- No need to wait
c- For 6 month
d. Till next pregnancy

Q22-Which of the following is the danger sign of postpartum except?

a- Discharge
b-Dyspnea
c-Fever
d-Pain

Q23-What is the sign of Postpartum Eclampsia?

a-Changes in vision,trouble breathing, severe headache
b-Loose motion
c-Vomiting
d-Heart burn

Q24-Which condition is known as postpartum heamorrhage?

a- **excessive bleeding**
b-Fever (more than 100 F)

c- Foul vaginal discharge
d-Pain in abdomen

Q25- What is exclusive Breast feeding?

a-Combination of mother milk and artificial feed
b-Only breast feeding up to 6 month
d-Feeding the baby with buffalo milk
c-Feeding the baby with cow milk

Q26 What is the exact time for the initiation of breast milk?

a. Within 30 Minutes after normal delivery or as soon as possible
b. Within 1 Hour after normal delivery.
c. after 4 hours of normal delivery
d.Second day of delivery

Q27 How the breast engorgement could be prevented?

a. Hot Fomentation
b. Oral Medicine
c. Topical applications
d.cold fermentation

Q28-What is the importance of breast feeding?

a-breast milk is easier to digest
b-breast milk is not free of cost
c- it is not readily available
d-it may cause diarrhea

Q29-What should be the duration of breast feeding at one time?

a-5-10 minutes
b-10-20 minutes
c-20-40 minutes
d-40-55 minutes

Q30-The most important point to be remember while breast feeding

a-Clean breast only before feed

b-clean breast only after feed
c-Clean breast before and after feed
d-No need for cleaning breast

Q31-What is the duration of exclusive breast feeding?

a-2 months
b-3 months
c-6 months
d-12 months

Q 32 Breast milk has adequate level of

a-antibodies
b-vitamin C
c-Iodine
d-Fluride

Q 33Method of effective milk transfer

a-Half nipple should be into baby's mouth
b-The nipple and areola inside the baby's mouth
c-The nipple should be inside but areola should be outside of baby's mouth
d-The nipple should touch the baby's mouth

Q34-Which vaccine is indicated during pregnancy?

a-Polio
b-Rubella
c-Typhoid
d-T.T

Q35-What is the time for administering BCG vaccine?

a-At birth or as early as possible till1year of age
b-At 3 month only
c-At 6 month only
d-At 12 month only

Q 36 BCG vaccine protect newborn from which disease

a-Cancer
b-Rubella
c-Typhoid
d- Tubercuosis

Q37-What is contraindicated for care of baby?

a-Applying kajal on eyes
b-Use diaper
c-Clean& dry the umbilicalcord
d-Cleaning the baby skin daily

Q38- How to clean the stump

a- Gently wipe from the base to the top of the stump
b-Gently wipe from top to base of the stump
c-Gently wipe from outer to inner of the stump
d- Clening can be done by any method

Q39-Which is the danger sign of newborn?

a-Bleeding,convulsions,-poor feeding
b-Inly bledding
c.Only convulsion
d.Only poor feeding

Q40-What are the benefits of family planning?

a-**Control unwanted population**
b-Increase the population of nation
c-Causes inferlity
d-Increase the risk of unwanted pregnancy

Q41-Which of the following is the permanent contraception method for women?

a-female condom
b-contraceptive pills
c-safe periods
d-tubal ligation

Q42-Which contraceptive method requires exclusive breastfeeding?

a-Condoms
b-Lactational amenorrhea
c-Progestogen only pills
d-Safe periods

Q43-What is the use of Emergency contraception pills?

a-To prevent pregnancy upto 5 days
b- To prevent pregnancy upto 10 days
c- To prevent pregnancy upto 15 days
d- To prevent pregnancy upto 20 days

Q44-Which of the following is included in the postnatal visit?

a-Immunization schedule
b-Newborn care
c-Health check ups of mother
d-All of the above

Q45-When the third postnatal visit after birth of baby?

a-4-6 weeks after birth
b-6-8 weeks after birth
c-8-10 weeks after birth
d-10-12 weeks after birth

Answer key

S.No.	Correct answer
1.	c
2.	a
3.	b
4.	c
5.	a
6.	b
7.	d
8.	d
9.	b
10.	a
11.	a
12.	a
13.	a
14.	b
15.	d
16.	c
17.	a
18.	a
19.	c
20.	c
21.	a
22.	b
23.	a
24.	a
25.	b
26.	a
27.	a
28.	a
29.	c
30.	c
31.	c
32.	a
33.	b
34.	d
35.	a
36.	d
37.	a
38.	a
39.	a
40.	a
41.	d
42.	b
43.	a
44.	d
45.	a

PERCEPTION SCALE

Instructions: dear participants, you are requested to fill up the space with tick(√) mark for the appropriate option in each statement. Your detail will be kept confidential.

The responses for the statement interpreted as 4 for strongly agree, 3 for agree, 2 for disagree, 1 for strongly disagree.

S. No.	Statement	Strongly agree (4)	Agree (3)	Disagree (2)	Strongly disagree (1)
	Postnatal care				
1.	Eating small meals frequently, every three hours.				
2.	Plenty fluid intake everyday helps in healthy postnatal period.				
3.	Beverages like tea or coffee should be avoided before, during or soon after a meal.				
4.	Iron intake during pregnancy helps to reduce the chances of anemia.				
5.	Exercisesafter delivery enhances the stamina levels and makes body flexible.				
6.	Kegel exercises strengthen and tone pelvic muscles and lesson perineal pain.				
7.	Feeling sad or hopeless for more than 10 days after giving birth are the signs of postpartum depression.				
8.	Bleeding heavier than normal consider as warning sign for mother.				
	Newborn care				
9.	Perform breast feeding for first six months of babies 'life is essential for newborn development.				
10.	Mothers are less prone to the cancer of the breast and ovaries if regular feed their baby.				
11.	Demand feeding should be provided to the baby.				
12.	Regular cleaning of cord with warm water should be done by mother.				
13.	Baby is not feeding well indicates a danger sign.				
	Postnatal counseling				
14.	Lactational amenorrhea is a best contraceptive choice.				
15.	Copper T devices have many side effects.				
16.	Save sexual relation after delivery reduces the chance of STDs & HIV.				
17.	Follow up or routine health checkups after delivery in important for both mother and newborn.				

PRACTICE SCALE

S. No.	Statement	Always (2)	Sometime (1)	Never (0)
1.	Do you take iron and folic acid tablets regularly?			
2.	Do you perform exercises daily after delivery for 30 minutes?			
3.	Do you Perform deep breathing exercise.			
4	Do you regularly clean your perineal area with warm water and dry it with clean cloth?			
5	Do you perform kegel exercise to strengthening the muscle tone and reduces perineal pain?			
6	Do you Change the pads frequently			
7	Do you think breast disorders can be minimize by regular breastfeeding?			
8	Do you Ensure the baby's chin touches the breast, cover complete areola and deep sucks while breast feeing			
9	Do you wash your hands before and after cleaning of umbilical cord?			
10	Do you able to recognize the danger signs in the newborn?			
11	Do you breast feed your baby to avoid chances of getting pregnant?			
12	Do you clean breast & nipple before and after each feed.			
13.	Do your husband forces you not to use any contraceptive method after delivery?			
14	Have you ever used emergency contraceptive method (72hrs) pill to avoid pregnancy after having unprotected sex?			
15	Do u take high fiber diet			